

## **SP-T11 Effects of Fuel Load Management and Fire Prevention on Wildlife and Plant Communities**

*October 25, 2002*

### **1.0 Introduction/Background**

Relicensing stakeholders have expressed concern that historic land management and fire prevention activities within the FERC project boundary have resulted in increased fuel loading which has lead to an increased risk of destructive wildfire. Relatively little information is available from the project area related to current fuel loads or wildfire risk. The purpose of this study is to provide information to the Land Use Work Group, which is evaluating this issue. Specific information to be collected under this study includes the effects of fire prevention and fuels management practices on native plant and animal communities within the FERC project boundary.

### **2.0 Study Objectives**

Study goal is to provide information to the Land Use Work Group that will allow evaluation of land use practices and options within the project boundary. The first study objective is to provide information related to effects of historic fire prevention strategies on existing plant communities and wildlife resources within the project boundary. The second study objective is to provide information that will allow assessment of potential fuels management activities impacts (both positive and negative) on native plant communities and wildlife resources.

### **3.0 Relationship to Relicensing/Need for the Study**

The information collected in this study will be used to evaluate potential options and risks related to land management practices within the project boundary. The data collected will be used to evaluate potential changes in land management within the project area. The potential changes in land management practices could be developed into PM&E measures. This information is needed by the Land Use Work Group to evaluate and compare the risks, benefits, costs, and liabilities of changing land use practices within the project area.

The California Environmental Quality Act requires evaluation of potential project impacts related to safety including increased risk of wildfire. The fuels management problem is an issue throughout the western United States and an abundance of scientific literature exists related to the ecological effects of both fire prevention and fuels management. Much of this information was collected within California and directly relates to the plant communities and wildlife resources present within the project area. This study does not propose to collect additional information. Rather, the proposed study will collect existing ecological information that will be used as the basis for evaluation.

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## 4.0 Study Area

The study scope will include terrestrial plant communities and wildlife habitats present within the project boundary. Neither DWR nor FERC have any regulatory authority to alter land use practices on lands outside the project area. However, most of the plant communities and wildlife habitats that occur within the project boundary are also found all along the western slope of the Sierra Nevada mountain range. Therefore, the information collected as part of this study will be applicable to wide areas outside the project boundary and may be used in a cumulative impacts assessment. Study plans approved by the Environmental Work Group define the limits of the study area. If initial study results indicate that the study area should be expanded or contracted, the Environmental Work Group will discuss the basis for change and revise the study area as appropriate.

## 5.0 General Approach

The general approach to this study will be a literature review followed by computer modeling, and resulting in a written evaluation comparing the effects of current and potential fuels management. Our hypothesis is that historic fire prevention practices have served to reduce fire frequency, which has led to changes in plant community composition and structure. These changes can affect the occurrence, density, and distribution of wildlife species.

If initial study results indicate that the methods and tasks should be modified, the Environmental Work Group will discuss the basis for change and revise the study plan as appropriate.

### *Detailed Methodology and Analysis Procedures*

#### Task 1 - Data Collection

Perform literature review and gather data. The primary sources of information includes the annual proceedings of the Tall Timbers Fire Ecology Conference, discussion with Pacific Southwest Range and Experiment Station fire ecologists, fire ecology literature reviews, and other scientific literature. Coordinate with Land Use Work Group to identify potential fuel load management strategies to evaluate.

#### Task 2 - Habitat Mapping

Obtain mapping of plant communities/wildlife habitats under SP-T4.

#### Task 3 - Ecological Effects of Existing Fire Prevention Practices

Using the information collected in Tasks 1 and 2, develop predictions of and model the potential ecological effects of historic/current fire prevention practices on each of the major plant communities present within the project area. These predictions may include changes in plant succession, density, distribution, size classes, plant species composition, stand structure, understory development, ground cover as well as changes in other physical and biological characteristics.

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#### Task 4 - CWHR Analyses of Fire Prevention

Using the California Wildlife/Habitat Relationships Database (CWHR) input the plant community changes identified and modeled in Task 3. CWHR will predict which wildlife species may benefit from the predicted habitat changes as well as those species that could be adversely impacted.

#### Task 5 - Ecological Effects of Fuels Management Options

Using the information collected in Task 1 and 2, develop predictions of and model the potential impact of fuels reduction activities on each major plant community.

These predictions may include changes in plant succession, stand density, species and community distribution, size classes, plant species composition, stand structure, understory development, shrub density and ground cover as well as changes in other physical and biological characteristics.

#### Task 6 - CWHR Analyses of Fuels Management Options

Using the California Wildlife/Habitat Relationships Database input the plant community changes identified and modeled in Task 5. CWHR model output will predict which wildlife species benefit from the predicted habitat changes as well as those species that could be adversely impacted.

#### Task 7 - Summarize and Report

Summarize findings from Tasks 3 through 6 in a written summary report to be submitted to the Land Use Work Group. This report will include the ecological basis for predicted changes in plant community composition and structure, the individual plant community models, the CWHR model outputs, and a brief statement of findings.

## **6.0 Results and Products/Deliverables**

### ***Results***

Study results will be summarized in a written report to the Land Use and Environmental Work Groups. This report will include the ecological basis for predicted changes in plant community composition and structure, the CWHR model outputs, and a brief statement of findings. These data will allow the Land Use Work Group to identify the plant community and wildlife effects of the current fire prevention/control strategy as well as the potential environmental effects of possible alternative fuels management strategies. These plant community effects may include changes in species composition, canopy closure, snag densities, tree understory, stand density, and shrub occurrence.

### ***Products/Deliverables***

A report will be provided to the Land Use Work Group.

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## **7.0 Coordination and Implementation Strategy**

### ***Coordination with Other Resource Areas/Studies***

Study results are one component of SP- LU5. Study requires information from SP-T4.

### ***Issues, Concerns, Comments Tracking and/or Regulatory Compliance Requirements***

This study will evaluate current and potential fuels management options on wildlife, wildlife habitat, and native plant communities. This study fully or partially addresses the following Stakeholder issues:

*Stakeholder issues fully addressed by SP-T11 Effects of Fuel Load Management and Fire Prevention on Wildlife and Plant Communities*

- TE11—effects of fire prevention/fuel load control on natural communities
- TE33—fuel load on state lands: potential impact to habitat (wildlife and human Note: human impacts will be addressed in SP-LU5)
- TE64—effects of existing and future fire prevention/fuel load control on natural communities

## **8.0 Schedule**

Task 1 completed by September 2002. Task 2 completed by June2002. Tasks 3 through 6 completed by December 2002. Task 7 completed by October 2003.